

J1011 U.S. PRO
10/09/01
03/14/02



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant	:	Kim et al.)	Group Art Unit Unknown
App. No.	:	Unknown)	
Filed	:	Herewith)	
For	:	DOUBLE-SPIRO ORGANIC COMPOUNDS AND ORGANIC ELECTROLUMINESCENT DEVICES USING THE SAME)	
Examiner	:	Unknown)	

INFORMATION DISCLOSURE STATEMENT

United States Patent and Trademark Office
P.O. Box 2327
Arlington, VA 22202

Dear Sir:

Enclosed is form PTO-1449 listing references that are also enclosed. This Information Disclosure Statement is being filed within three months of the filing date of this application or upon filing if this is a CPA or RCE, and no fee is required in accordance with 37 C.F.R. § 1.97(b)(1), (b)(2), or (b)(4).

Respectfully submitted,

~~KNOBBE, MARTENS, OLSON & BEAR LLP~~

By: Paul C. Steinhardt

Paul C. Steinhardt
Registration No. 30,806
Attorney of Record
620 Newport Center Drive
Sixteenth Floor
Newport Beach, CA 92660
(619) 687-8617

Dated: 3/14/02

FORM PTO-1449 U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE		ATTY. DOCKET NO. MUTU12.001AUS	APPLICATION NO. Unknown
INFORMATION DISCLOSURE STATEMENT BY APPLICANT		APPLICANT Kim et al.	
(USE SEVERAL SHEETS IF NECESSARY)		FILING DATE Herewith	GROUP Unknown

J1011 U.S. PTO
10/09/81
03/14/02

U.S. PATENT DOCUMENTS

EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE (IF APPROPRIATE)
1	5,840,217	Nov. 24, 98	Lupo et al.			April 5, 1995
2	5,026,894	Jan. 25, 91	Tour et al.			March 12, 1990

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
						YES	NO

EXAMINER INITIAL	OTHER DOCUMENTS (INCLUDING AUTHOR, TITLE, DATE, PERTINENT PAGES, ETC.)	
3	Hamada et al., Organic light-emitting diodes using a gallium complex., April 20, 1998, American Institute of Physics, Volume 72, No. 16.	
4	Murata et al., Organic light-emitting devices with saturated red emission using 6, 13-diphenylpentacene., April 16, 2001, American Institute of Physics, Volume 78, No. 16.	
5	Shi et al., Doped organic electroluminescent devices with improved stability., March 31, 1997, American Institute of Physics, Volume 70, No. 13.	
6	Adachi et al., High-efficiency organic electrophosphorescent devices with tris(2-phenylpyridine) iridium doped into electron-transporting materials., August 7, 2000, American Institute of Physics, Volume 77, No. 6.	
7	Adachi et al., High-efficiency red electrophosphorescence devices., March 12, 2001, American Institute of Physics, Volume 78, No. 11.	
8	Burrows et al., Operating lifetime of phosphorescent organic light emitting devices., May 1, 2000, American Institute of Physics, Volume 76, No. 18.	
9	Baldo et al., Very high-efficiency green organic light-emitting devices based on electrophosphorescence., July 5, 1999, American Institute of Physics, Volume 75, No. 1.	
10	Baldo et al., Improved energy transfer in electrophosphorescent devices., January 18, 1999, American Institute of Physics, Volume 74, No. 3.	
11	Hamada et al., Organic light-emitting diodes using 3- or 5-hydroxyflavone-metal complexes., December 8, 1997, American Institute of Physics, Volume 71, No. 23.	
12	Baldo et al., Improved energy transfer in electrophosphorescent devices., January 18, 1999, American Institute of Physics, Volume 74, No. 3.	
13	Gigli et al., High-efficiency oligothiopene-based light-emitting diodes., July 26, 1999, American Institute of Physics, Volume 75, No. 4.	
14	Kido et al., Fabrication of highly efficient organic electroluminescent devices., November 9, 1998, American Institute of Physics, Volume 73, No. 19.	
15	Yang et al., Photoluminescence and electroluminescence properties of dye-doped polymer system., 1997, Elsevier Science S.A., Synthetic Metals., 335-336.	
16	Watanabe et al. Optimization of emitting efficiency in organic LED cells using Ir complex., 2001, Elsevier Science S.A., Synthetic Metals., 203-207.	
17	Liedenbaum., Low voltage operation of large area polymer LEDs., 1997, Elsevier Science S.A., Synthetic Metals., 109-111.	
18	Hide et al., Conjugated polymers as solid-state laser materials., 1997, Elsevier Science S.A., Synthetic Metals., 35-40.	
19	Muckl et al., Transient electroluminescence measurements on organic heterolayer light emitting diodes., 2000, Elsevier Science S.A., Synthetic Metals., 91-94.	

EXAMINER	DATE CONSIDERED
*EXAMINER: INITIAL IF CITATION CONSIDERED, WHETHER OR NOT CITATION IS IN CONFORMANCE WITH MPEP 609; DRAW LINE THROUGH CITATION IF NOT IN CONFORMANCE AND NOT CONSIDERED, INCLUDE COPY OF THIS FORM WITH NEXT COMMUNICATION TO APPLICANT.	

FORM PTO-1449 U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE		ATTY. DOCKET NO. MUTU12.001AUS	APPLICATION NO. Unknown
INFORMATION DISCLOSURE STATEMENT BY APPLICANT		APPLICANT Kim et al.	
(USE SEVERAL SHEETS IF NECESSARY)		FILING DATE Herewith	GROUP Unknown

EXAMINER INITIAL	OTHER DOCUMENTS (INCLUDING AUTHOR, TITLE, DATE, PERTINENT PAGES, ETC.)
✓ 20	Shoustikov et al., Orange and red organic light-emitting devices using aluminum tris(5-hydroxyquinoxaline), 1997, Elsevier Science S.A., Synthetic Metals., 217-221.
✓ 21	Tokito et al., strongly modified emissio from organic elecloluminescent device with a microcavity., 1997, Elsevier Science S.A., Synthetic Metals., 49-52.
✓ 22	Wakimoto et al., Stability characteristics of quinacridone and coumarin molecules as guest dopants in the organic LEDs., 1997, Elsevier Science S.A., Synthetic Metals., 15-19.
✓ 23	Ma et al., Bright blue electroluminescent devices utiliaing poly (N – vinylcarbazole) doped with fluorescent dye., 1997, Elsevier Science S.A., Synthetic Metals., 331-332.
✓ 24	Sano et al., Organic eletroluminescent devices doped condensed polycyclic aromatic compounds., 1997, Elsevier Science S.A., Synthetic Metals., 27-30.
✓ 25	Mitschke et al., The electroluminescence of organic materials., 2000, The Royal Society of Chemistry, 1471-1507.
✓ 26	Barbarella et al., Modified Oligothiophenes with High Photo and Electroluminescence Efficiencies., 1999, Advanced Materials, 11, No. 16.
✓ 27	Schmitz et al., Polymeric Light-Emitting Diodes Based on Poly(p-phenylene ethynylene), Poly(triphenylamine), and Spiroquinoxaline., 2001, Advanced Functional Materials, 11, No. 1.
✓ 28	Lamansky et al., Synthesis and Characterization of Phosphorescent Cyclometalated Iridium Complexes., 2001, Dept. of Chemistry, University of Southern California, 1704-1711.
✓ 29	Lamansky et al., Highly Phosphorescent Bis-Cyclometalated Iridium Complexes: Synthesis, Photophysical Characterization, and Use in Organic Light Emitting Diodes., 2001, American Chemical Society, 123, 4304-4312.
✓ 30	Tsutsui et al., High Quantum Efficiency in Organic Light-Emitting Devices with Iridium-Complex as a Triplet Emissive Center., 1999, Japanese Journal fo Applied Physics., Volume 38, L1502-L1504.
✓ 31	Naito et al., Molecular Design for Nonpolymeric Organic Dye Glasses with Thermal Stability: Relations between Thermodynamic Parameters and Amorphous Properties., 1993, The Journal of Physical Chemistry, Volume 97, No. 23, 6240-6248.
✓ 32	Bath et al., Electron mobility in tris(8-hydroxy-quinoline)aluminum thin filims determined via transient eletroluminescence from single- and multilayer organic light-emitting diodes., April 1, 2001, Journal of Applied Physics, Volume 89, No. 7, 3711-3719.
✓ 33	Adachi et al., Organic electroluminescence of silole-incorporated polysilane., 2000, Journal of Luminescence, Volume 87 89, 1174-1176.
✓ 34	Clarkson et al., Sprans with four aromatic radicals on the spiro carbon atom., 1930, The Chemistry Laboratory of the Unoversity of Michigan, Volume 52, 2881-2891.

S:\DOCS\MCK\MCK-5651.DOC
031302

EXAMINER	DATE CONSIDERED
*EXAMINER: INITIAL IF CITATION CONSIDERED, WHETHER OR NOT CITATION IS IN CONFORMANCE WITH MPEP 609; DRAW LINE THROUGH CITATION IF NOT IN CONFORMANCE AND NOT CONSIDERED, INCLUDE COPY OF THIS FORM WITH NEXT COMMUNICATION TO APPLICANT.	